

I claim:

1. A method of dynamically allocating a data rate for wireless communication between a first transceiver and a second transceiver comprising the steps of:
  - 5 transmitting data at a first predetermined power level and a first data rate from a first transceiver to a second transceiver;
  - receiving the data at the second transceiver;
  - sensing the received power level of the received data;
  - determining a modified first data rate greater than said first data rate at which
  - 10 to transmit further data, said modified first data rate having a maximum data rate that is determined based upon the received power level of the received data;
  - transmitting the further data at the modified first data rate and the first predetermined power level from the first transceiver to the second transceiver; and
  - receiving the further data at the second transceiver.
- 15 2. A method according to claim 1 further comprising the steps of :
  - sensing the received power level of the received further data; and
  - redetermining the modified first data rate if the received power level of the received further data is changed by a predetermined amount from the received power
  - 20 level of the received data.
3. A method according to claim 2 wherein the predetermined amount is about 1 dB.

4. A method according to claim 1 further comprising the steps of:
- transmitting second data at a second predetermined power level different from the first predetermined power level and a second data rate from the second transceiver to the first transceiver;
- 5 receiving the second data at the first transceiver;
- sensing the received power level of the received second data;
- determining a modified second data rate greater than said second data rate at which to transmit further second data, said modified second data rate having a maximum data rate that is determined based upon the received power level of the
- 10 received second data;
- transmitting the further second data at the modified second data rate and the second predetermined power level from the second transceiver to the first transceiver;
- and
- receiving the further second data at the first transceiver;
- 15
5. A method according to claim 4 further comprising the steps of :
- sensing the received power level of the received further second data; and
- redetermining the modified second data rate if the received power level of the received further second data is changed by a second predetermined amount from the
- 20 received power level of the received second data.
6. A method according to claim 5 wherein the second predetermined amount is about 1 dB.

7. A method according to claim 4, wherein the steps of transmitting the data and the further data transmits within the 5.725-5.825Ghz band and the steps of transmitting the second data and the further second data transmits within one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

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8. A method according to claim 4, wherein the steps of transmitting the data and the further data transmits within the 5.725-5.825Ghz band and the steps of transmitting the second data and the further second data transmits within both of the 5.25-5.35GHz and 5.15-5.25GHz bands.

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9. A method according to claim 4, wherein the first predetermined power level is greater than the second predetermined power level.

10. A method of wirelessly communicating between a first base station transceiver and a plurality of terminal devices including at least first and second terminal device transceivers comprising the steps of:

transmitting data at a first predetermined power level and a first data rate within the 5.725-5.825Ghz band from a first base station transceiver to a repeater ;  
receiving the data at the repeater;  
transmitting a first portion of the data from the repeater to the first terminal device transceiver;  
transmitting a second portion of the data from the repeater to the second terminal device transceiver ;

sensing the received power level of the received data;

determining a modified first data rate greater than said first data rate at which to transmit further data, said modified first data rate having a maximum data rate that is determined based upon the received power level of the received data;

5        transmitting the further data at the second data rate and the first predetermined power level from the first base station transceiver to the repeater;

receiving the further data at the repeater;

transmitting a first portion of the further data from the repeater to the first terminal device transceiver at a second data rate; and

10        transmitting a second portion of the further data from the repeater to the second terminal device transceiver at a third data rate.

11.     A method according to claim 10 further comprising the steps of :

sensing the received power level of the received further data by the repeater;

15     and

redetermining the modified first data rate if the received power level of the received further data is changed by a predetermined amount from the received power level of the received data.

20     12.     A method according to claim 10 wherein each of the repeaters contains a plurality of repeater transceivers such that there exists one repeater transceiver for each of the plurality of terminal device transceivers; and

wherein the steps of receiving the data and the further data at the repeater cause each of the plurality of repeater transceivers to receive a portion of the data and the further data corresponding to one of the terminal device transceivers.

5     13.     A method according to claim 12, wherein the steps of transmitting the data and the further data transmit from first and second repeater transceivers to respective first and second terminal device transceivers using the 5.725-5.825Ghz band.

10     14.     A method according to claim 13, further including the step of transmitting second data from each of the first and second terminal device transceivers at respective fourth and fifth data rates to the repeater at a second predetermined power level using one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

15     15.     A method according to claim 14, further including the step of transmitting the second data from the first and second repeater transceivers at a sixth data rate to the base station transceiver at the first predetermined power level using the 5.725-5.825Ghz band.

20     16.     A method according to claim 10, wherein the steps of transmitting the data and the further data transmit from the repeater to the first and second terminal device transceivers at a second predetermined power level using one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

17. A method according to claim 16 further including the steps of transmitting second data from each of the first and second terminal device transceivers to the repeater at a third predetermined power level using the other one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

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18. A method according to claim 17 further including the steps of transmitting the second data from the repeater to the base station transceiver at the first predetermined power level using the 5.725-5.825Ghz band.

10 19. A method according to claim 17, wherein the first predetermined power level is greater than the second predetermined power level.

20. A method according to claim 10, wherein there is included a plurality of repeaters and a second plurality of terminal device transceivers, such that one  
15 repeater and corresponding terminal devices are in one room and another repeater and corresponding terminal devices are in another room.

21. A method according to claim 10, wherein there is included a plurality of repeaters and a second plurality of terminal device transceivers, such that one  
20 repeater and corresponding terminal devices are in one building and another repeater and corresponding terminal devices are in another building.

22. An apparatus for dynamically allocating a data rate for wireless communication, comprising:

a first transceiver; and

a second transceiver,

5 the first transceiver including means for transmitting data at a first predetermined power level and a first data rate to said second transceiver,

the second transceiver including:

means for receiving the data;

means for sensing the received power level of the received data; and

10 means for determining a modified first data rate greater than said first data rate at which to transmit further data, said modified first data rate having a maximum data rate that is determined based upon the received power level of the received data,

the first transceiver further including means for transmitting the further data at  
15 the modified first data rate and the first predetermined power level to the second transceiver, and

the second transceiver further including means for receiving the further data..

23. An apparatus according to claim 22 wherein the second transceiver further  
20 comprises:

means for sensing the received power level of the received further data; and

means for redetermining the modified first data rate if the received power level of the received further data is changed by a predetermined amount from the received power level of the received data.

- 5    24.    An apparatus according to claim 23 wherein the predetermined amount is about 1 dB.

25.    An apparatus according to claim 22, wherein:

10    the second transceiver further comprises means for transmitting second data at a second predetermined power level different from the first predetermined power level and a second data rate to the first transceiver,

the first transceiver further comprises:

means for receiving the second data;

15    means for sensing the received power level of the received second data; and

means for determining a modified second data rate greater than said second data rate at which to transmit further second data, said modified second data rate having a maximum data rate that is determined based upon the received power level of the received second data,

20    the second transceiver further comprises means for transmitting the further second data at the modified second data rate and the second predetermined power level to the first transceiver, and



the first transceiver further comprises means for receiving the further second data.

26. An apparatus according to claim 25 wherein the first transceiver further  
5 comprises:

means for sensing the received power level of the received further second data; and

means for redetermining the modified second data rate if the received power level of the received further second data is changed by a second predetermined  
10 amount from the received power level of the received second data.

27. An apparatus according to claim 26 wherein the second predetermined amount is about 1 dB.

15 28. An apparatus according to claim 25, wherein the means for transmitting the data and the further data transmits within the 5.725-5.825Ghz band and the means for transmitting the second data and the further second data transmits within one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

20 29. An apparatus according to claim 25, wherein the means for transmitting the data and the further data transmits within the 5.725-5.825Ghz band and the means for transmitting the second data and the further second data transmits within both of the 5.25-5.35GHz and 5.15-5.25GHz bands.

30. An apparatus according to claim 25, wherein the first predetermined power level is greater than the second predetermined power level.

- 5 31. An apparatus for wirelessly communications, comprising:
- a first base station transceiver;
  - a plurality of terminal devices including at least first and second terminal device transceivers; and
  - a repeater,
- 10 the first base station transceiver including means for transmitting data at a first predetermined power level and a first data rate within the 5.725-5.825Ghz band to the repeater;
- the repeater including:
- means for receiving the data;
  - 15 means for transmitting a first portion of the data to the first terminal device transceiver; and
  - means for transmitting a second portion of the data to the second terminal device transceiver,
- the first and second terminal device transceivers each including:
- 20 means for sensing the received power level of the received data; and
  - means for determining a modified first data rate greater than said first data rate at which to transmit further data, said modified first data rate having

a maximum data rate that is determined based upon the received power level of the received data,

the first base station transceiver further including means for transmitting the further data at the second data rate and the first predetermined power level to the

5 repeater,

the receiver further including:

means for receiving the further data;

means for transmitting a first portion of the further data to the first terminal device transceiver at a second data rate; and

10 means for transmitting a second portion of the further data to the second terminal device transceiver at a third data rate.

32. An apparatus according to claim 31 wherein the first and second terminal device transceiver further include:

15 means for sensing the received power level of the received further data; and  
means for redetermining the modified first data rate if the received power level of the received further data is lower by a predetermined amount from the received power level of the received data.

20 33. An apparatus according to claim 32, wherein the repeater contains a plurality of repeater transceivers such that there exists one repeater transceiver for each of the plurality of terminal device transceivers; and

wherein the means for receiving the data and the further data cause each of the plurality of repeater transceivers to receive a portion of the data and the further data corresponding to one of the terminal device transceivers.

- 5     34.     An apparatus according to claim 33, wherein the means for transmitting the data and the further data transmit from first and second repeater transceivers to respective first and second terminal device transceivers using the 5.725-5.825Ghz band.
- 10    35.     An apparatus according to claim 34, wherein the first and second terminal device transceivers each include means for transmitting second data at respective fourth and fifth data rates to the repeater at a second predetermined power level using one of the 5.25-5.35GHz and 5.15-5.25GHz bands.
- 15    36.     An apparatus according to claim 35, wherein the first and second repeaters each including means for transmitting the second data at a sixth data rate to the base station transceiver at the first predetermined power level using the 5.725-5.825Ghz band.
- 20    37.     An apparatus according to claim 31, wherein the means for transmitting the data and the further data transmit from the repeater to the first and second terminal device transceivers at a second predetermined power level using one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

38. An apparatus according to claim 37, wherein the first and second terminal device transceivers each include means for transmitting second data to the repeater at a third predetermined power level using the other one of the 5.25-5.35GHz and 5.15-5.25GHz bands.

39. An apparatus according to claim 38 wherein the repeater further includes means for transmitting the second data to the base station transceiver at the first predetermined power level using the 5.725-5.825Ghz band.

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40. An apparatus according to claim 38, wherein the first predetermined power level is greater than the second predetermined power level.

41. An apparatus according to claim 31 wherein there is included a plurality of repeaters and a second plurality of terminal device transceivers, such that one repeater and corresponding terminal devices are in one room and another repeater and corresponding terminal devices are in another room.

42. An apparatus according to claim 31, wherein there is included a plurality of repeaters and a second plurality of terminal device transceivers, such that one repeater and corresponding terminal devices are in one building and another repeater and corresponding terminal devices are in another building.